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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. 2003-NE-12-AD; Amendment 39-14609; AD 2006-11-05]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce plc RB211 Series Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is superseding an existing airworthiness directive (AD) for Rolls-Royce plc (RR) RB211-22B series, RB211-524B, -524C2, -524D4, -524G2, -524G3, and -524H series, and RB211-535C and -535E series turbofan engines with high pressure compressor (HPC) stage 3 disc assemblies, part numbers (P/Ns) LK46210, LK58278, LK67634, LK76036, UL11706, UL15358, UL22577, UL22578, and UL24738 installed. This AD requires removing from service certain disc assemblies before they reach their full published life if not modified with anticorrosion protection. This AD results from the manufacturer's reassessment of the corrosion risk on HPC stage 3 disc assemblies that have not yet been modified with sufficient application of anticorrosion protection. We are issuing this AD to prevent corrosion-induced uncontained disc failure, resulting in damage to the airplane.

**DATES:** This AD becomes effective [insert date 35 days after date of publication in the FEDERAL REGISTER]. The Director of the Federal Register previously approved the

incorporation by reference of certain publications listed in the regulations as of February 24, 2004 (69 FR 2661, January 20, 2004).

**ADDRESSES:**

You can get the service information identified in this AD from Rolls-Royce plc, PO Box 31, Derby, England, DE248BJ; telephone: 011-44-1332-242424; fax: 011-44-1332-245-418.

You may examine the AD docket at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA. You may examine the service information, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

**FOR FURTHER INFORMATION CONTACT:** Ian Dargin, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park; Burlington, MA 01803; telephone (781) 238-7178; fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** We proposed to amend 14 CFR Part 39 with a proposed AD. The proposed AD applies to RR RB211-22B series, RB211-524B, -524C2, -524D4, -524G2, -524G3, and -524H series, and RB211-535C and -535E series turbofan engines with HPC stage 3 disc assemblies, P/Ns LK46210, LK58278, LK67634, LK76036, UL11706, UL15358, UL22577, UL22578, and UL24738 installed. We published the proposed AD in the *Federal Register* on July 28, 2005 (70 FR 43659). That action proposed to require removing from service certain disc assemblies before they reach their full published life if not modified with anticorrosion protection.

## **Examining the AD Docket**

You may examine the AD Docket (including any comments and service information), by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. See ADDRESSES for the location.

## **Comments**

We provided the public the opportunity to participate in the development of this AD. We received no comments on the proposal or on the determination of the cost to the public.

## **Conclusion**

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

## **Costs of Compliance**

We estimate that this AD will affect 1,000 engines installed on airplanes of U.S. registry. We also estimate that it will take about 31 workhours per engine to perform the actions, and that the average labor rate is \$65 per workhour. Required parts will cost about \$38,000 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$40,015,000.

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866;
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include “AD Docket No. 2003-NE-12-AD” in your request.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Amendment 39-13434 (69 FR 2661, January 20, 2004) and by adding a new airworthiness directive, Amendment 39-14609, to read as follows:

2006-11-05 **Rolls-Royce plc**: Amendment 39-14609. Docket No. 2003-NE-12-AD.

#### **Effective Date**

(a) This AD becomes effective [insert date 35 days after date of publication in the FEDERAL REGISTER].

#### **Affected ADs**

(b) This AD supersedes AD 2004-01-20.

#### **Applicability**

(c) This AD applies to Rolls-Royce plc (RR) RB211-22B series, RB211-524B, -524C2, -524D4, -524G2, -524G3, and -524H series, and RB211-535C and -535E series turbofan engines with high pressure compressor (HPC) stage 3 disc assemblies, part numbers (P/Ns) LK46210, LK58278, LK67634, LK76036, UL11706, UL15358,

UL22577, UL22578, and UL24738 installed. These engines are installed on, but not limited to, Boeing 747, Boeing 757, Boeing 767, Lockheed L-1011, and Tupolev Tu204 series airplanes.

**Unsafe Condition**

(d) This AD results from the manufacturer's reassessment of the corrosion risk on HPC stage 3 disc assemblies that have not yet been modified with sufficient application of anticorrosion protection. The actions specified in this AD are intended to prevent corrosion-induced uncontained disc failure, resulting in damage to the airplane.

**Compliance**

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

## Removal of HPC Stage 3 Discs

(f) Remove from service affected HPC stage 3 disc assemblies identified in the following Table 1, using one of the following criteria:

**Table 1. Affected HPC Stage 3 Disc Assemblies**

<b>Engine Model</b>	<b>Rework Band for Cyclic Life Accumulated On Disc Assemblies P/Ns LK46210 and LK58278 (Pre RR Service Bulletin (SB) No. RB.211- 72-5420)</b>	<b>Rework Band for Cyclic Life Accumulated On Disc Assembly P/N LK67634 (Pre RR SB No. RB.211-72-5420)</b>	<b>Rework Band for Cyclic Life Accumulated On P/Ns LK76036, UL11706, UL15358, UL22577, UL22578, and UL24738 Disc Assemblies (Pre RR SB No. RB.211-72-9434)</b>
-22B series	4,000-6,200	7,000-10,000	11,500-14,000
-535E4 series	N/A	N/A	9,000-15,000
-524B-02, B-B-02, B3-02, and B4 series, Pre SB No. 72- 7730	4,000-6,000	7,000-9,000	11,500-14,000
-524B2 and C2 series, Pre SB No. 72-7730	4,000-6,000	7,000-9,000	11,500-14,000
-524B2-B-19 and C2-B-19, SB No. 72-7730	4,000-6,000	7,000-9,000	8,500-11,000
-524D4 series, Pre SB No. 72- 7730	4,000-6,000	7,000-9,000	11,500-14,000
-524D4-B series, SB No. 72-7730	4,000-6,000	7,000-9,000	8,500-11,000
-524G2, G3, H, and H2 series	4,000-6,000	7,000-9,000	8,500-11,000

(1) For discs that entered into service before 1990, remove disc and rework as specified in paragraph (g)(2) of this AD, on or before January 4, 2007, but not to exceed the upper cyclic limit in Table 1 of this AD before rework. Discs reworked may not exceed the manufacturer's published cyclic limit in the time limits section of the manual.

(2) For discs that entered into service in 1990 or later, remove disc within the cyclic life rework bands in Table 1 of this AD, or within 17 years after the date of the disc assembly entering into service, whichever is sooner, but not to exceed the upper cyclic limit of Table 1 of this AD before rework. Discs reworked may not exceed the manufacturer's published cyclic limit in the time limits section of the manual.

(3) For disc assemblies that when new, were modified with an application of anticorrosion protection and re-marked to P/N LK76036 (not previously machined) as specified by Part 1 of the original issue of RR service bulletin (SB) No. RB.211-72-5420, dated April 20, 1979, remove RB211-22B disc assemblies before accumulating 10,000 cycles-in-service (CIS), and remove RB211-524 disc assemblies before accumulating 9,000 CIS.

(4) If the disc assembly date of entry into service cannot be determined, the date of disc manufacture may be obtained from RR and used instead.

(5) Discs in RB211-535C operation are unaffected by the interim rework cyclic band limits in Table 1 of this AD, but must meet the calendar life requirements of either paragraph (f)(1) or (f)(2) of this AD, as applicable.

#### **Optional Rework of HPC Stage 3 Discs**

(g) Rework HPC stage 3 disc assemblies that were removed in paragraph (f) of this AD as follows:



(1) For disc assemblies that when new, were modified with an application of anticorrosion protection and re-marked to P/N LK76036 (not previously machined) as specified by Part 1 of the original issue of RR SB RB.211-72-5420, dated April 20, 1979, rework disc assemblies and re-mark to either LK76034 or LK78814 using paragraph 2.B. of the Accomplishment Instructions of RR SB No. RB.211-72-5420, Revision 4, dated February 29, 1980. This rework constitutes terminating action to the removal requirements in paragraph (f) of this AD.

(2) For all other disc assemblies, rework using Paragraph 3.B. of the Accomplishment Instructions of RR SB No. RB.211-72-9434, Revision 4, dated January 12, 2000. This rework constitutes terminating action to the removal requirements in paragraph (f) of this AD.

**Note 1:** If rework is done on disc assemblies that are removed before the disc assembly reaches the lower life of the cyclic life rework band in Table 1 of this AD, artificial aging of the disc to the lower life of the rework band, at time of rework, is required.

#### **Alternative Methods of Compliance**

(h) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

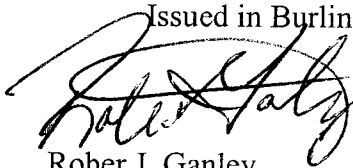
#### **Related Information**

(i) Civil Aviation Authority airworthiness directive 004-01-94, dated January 4, 2002, and RR Mandatory Service Bulletin No. RB.211-72-9661, Revision 4, dated January 4, 2002, pertain to the subject of this AD.

### **Material Incorporated by Reference**

(j) You must use Rolls-Royce plc Service Bulletin No. RB.211-72-5420, Revision 4, dated February 29, 1980, and Rolls-Royce plc Service Bulletin No. RB.211-72-9434, Revision 4, dated January 12, 2000, to perform the rework required by this AD. The Director of the Federal Register previously approved the incorporation by reference of these service bulletins in accordance with 5 U.S.C. 552(a) and 1 CFR part 51, as of February 24, 2004 (69 FR 2661, January 20, 2004). You can get copies from Rolls-Royce plc, PO Box 31, Derby, England, DE248BJ; telephone: 011-44-1332-242424; fax: 011-44-1332-245-418. You can review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on May 15, 2006.



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